Comment on FCC Third Notice of Inquiry concerning the deployment of Advanced Telecommunications pursuant to Section 706 of the Telecommunications Act of 1996. (CC Docket No. 98-146)

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Seven years ago it would have been thought impossible that the US would have enough fiber optic cable laid in the ground by 2001 to provide Universal Broadband IP service without even straining the capacity of the collective networks in this country. But somehow through the misallocation of capital caused by an extremely hot Junk Bond Market for anything telecom from 1996-2000, enough aggregate fiber backbone was laid to completely satisfy the bandwidth needs of the country for ten years. And as Wave Division Multiplexing and IP Video codec standard technologies improve, the existing backbone will improve it's own internal efficiency by Moore's Law type multiples. However, most of this bandwidth is dark (Most carriers like Qwest, Global Crossing, Level 3 and MCI are using less than 5% of their total fiber capacity). Planning for companies like Cisco, Nortel and Lucent all were based on extrapolating from the amount of fiber laid to the number of lasers, routers, etc that would be needed in the supply chain. The Telecom crash of 2001 is a result of an extraordinary pullback on the part of bandwidth holders to enable the raw fiber. This complete cratering of the primary engine of American technological growth is a direct result of the fact that advanced telecommunications capability in the "Last mile" is not being deployed in a reasonable and timely fashion. Without the acceleration of Last mile service this "glut" of backbone will continue to put many of the holders of that backbone into bankruptcy.

As a company in the business of deploying broadband entertainment and educational programming over advanced telecommunications networks we can speak from real world experience that the FCC needs to amend the definitions and terms of it's inquiry in order to get to the base of the problem. To begin with, we would suggest that the definition of "advanced telecommunications capability" in paragraph 5 of the Inquiry be revised to "a bandwidth in excess of 700 kilobits per second". The present definition of 200 kilobits per second does not provide any real advance over dial-up (56 KBPS) as it is incapable of supporting streaming video of any quality. In order to provide advanced services such as distance learning or video on demand a minimum of 700 KBPS is required. The existing glut of backbone and middle mile facilities are totally capable of supporting this bit rate. In addition the portion of the last mile from the DSLAM or CMTS (i.e. the Central Office or Headend) is totally capable of supporting this bit rate. Finally, all of the current "last 100 feet" (i.e. home networking) protocols support at least 7 MBPS. Because the bottleneck exists only in the local loop between CO's it is incumbent on the FCC to support a higher bit rate. We believe that neither cable modem or DSL providers should be able to claim that they are providing "broadband" or "high-speed" services without providing a minimum of 700 KBPS.

Furthermore we believe the existing regulations placed on local ILEC's in terms of Inter-lata data delivery are the equivalent of "fighting the last war". In a perfect market the Telecom acts of the 90's to enable CLEC's and DLEC's should have worked. The basic problem in the last mile is that there is insufficient inter-CO connectivity in order to provide true broadband service to even those customers who have paid for it. While there is ample dark fiber owned by ILECs in the local loop, the simple cost of OC 12 local loop circuits have been priced so high that even their DSL subsidiaries could not afford sufficient connectivity to run a true Broadband local network. This fact put most of the CLEC's out of business and now the ILEC's are in total control of the local loop. Senior officials at more than one ILEC DSL subsidiary have told us that they are oversubscribing DS3 circuits to such an extent that on a Thursday night the average DSL subscriber in a major metro region can expect no better than 96 KBPS throughput. Given that there is not any real competition from CLEC's today and that there is no chance that Wall Street would provide funding for new entrants we believe the FCC has to recognize the current market reality and return to regulating the two monopoly providers in each market: the ILEC and the Cable franchise owner. The only competition in advanced services will come from those two sources. As the ILEC's will probably be the only sufficiently capitalized entities to support the collapsing backbone providers that are currently seeking bankruptcy protection, we believe that the FCC should

allow the ILECs into the Inter-lata data business in return for a commitment to provide Universal 700 KBPS broadband service at reasonable rates. We believe that both cable and DSL broadband providers could move to "utility" pricing of the service so that a minimum service level could be in the $30 price range, while heavy users of data and video would pay more. Since the ILECs are currently pricing their wireless services in this manner and all of the current generation of routers are capable of monitoring the usage levels of individual IP addresses, they could quickly move to this model. We believe that several of the major cable MSO's are already moving to this model.

Assume that by 2005 every home had Universal Broadband with an Ethernet jack in the wall to which you could plug any browser based IP media terminal (PC, MAC, Wireless Tablet, Playstation II, X-Box, Set Top box, flat screen TV, etc) with 700 KBPS connectivity. In this world anyone who wanted to "Publish" media would have no more trouble than putting up a web site today. The obvious economic burden on Broadband content providers of not being able to reach a national audience would be relieved. They could sell their programming by subscription or "Pay per view" and would not have to pay any "gatekeeper" for the privilege of reaching his audience. Many of the worries about media concentration would be seen as the old paradigm of "Spectrum Scarcity" as opposed to the IP world of total abundance. As the web has shown, no classic media company from the 70's and early 80's is a dominant force on the Internet. Yahoo, AOL and MSN are all from a new era which challenges the notion that the old-line players always win in an open playing field. While it is clear that the marketing dollars of major media conglomerates like AOL Time Warner or Viacom/CBS would have huge power in the marketplace, the power would be limited in terms of being able to keep out rival content.

Finally this brings us to the topic of education. Both the current Real Networks and Microsoft IP Video codecs make it possible to publish video at VHS quality at 500 KBPS and DVD quality at 800 KBPS. These tools could enable the most important Distance Learning initiative in history. When MIT announced that it was going to allow people to audit it's courses on the Internet, it was but one more sign that the extraordinary institutions of learning in our country are ready to embrace IP based distance learning. Not only can kids catch up on their courses on line, but also the whole world of continuing education for adults would be transformed. The fact that the technology companies of this country are always trying to raise the number of foreign workers they can employ is symbolic of our inability to retrain our workers for the high paying jobs of today. Universal broadband to the home would enable a platform for Universities and private training companies to sell their services to the country as a whole.

In a practical sense there are already two laws (as discussed below) on the books that could help subsidize a Universal Broadband Initiative. Since our data has shown us that a 20:1 over-subscription model is sufficient (i.e. the ILEC would need to provision enough inter-CO bandwidth to provide 700 KBPS for every 20 active broadband subs), the actual outlay of funds for new routers, lasers and DSLAMs would not be punitive. Furthermore the existing Federal Universal Service Fund could be strengthened to provide more subsidies for Broadband. In addition the newly signed tax bill has credits for the educational purchase of Internet access and computers so that the average family could afford even the non-subsidized service thus allowing the Service Fund to be applied to low income, rural and schools and libraries.